

## CLAIMS

What is claimed is:

1. A panel mounted rotary switch, comprising:  
a bushing having an upper portion that extends through the panel to a user's side and  
a lower portion that remains beneath the panel and prevents the bushing from  
movement toward the user's side; and  
a detent sub-assembly housed in the upper portion of the bushing.
2. The panel mounted rotary switch of claim 1, having a shaft that couples a knob on  
the user's side with an electrical contact beneath the panel.
3. The panel mounted rotary switch of claim 2, wherein operation of the detent sub-  
assembly is independent of the knob.
4. The panel mounted rotary switch of claim 1, wherein the detent sub-assembly is  
positioned in planar relation to the panel.
5. The panel mounted rotary switch of claim 1, wherein the bushing is prevented from  
rotational movement by an engagement with the panel.
6. The panel mounted rotary switch of claim 5, wherein the lower portion of the  
bushing has a stop pin that fits within an aperture on the panel.
7. The panel mounted rotary switch of claim 5, wherein the upper portion of the  
bushing has a flat side that cooperates with a D shaped opening in the panel to  
prevent rotational movement.
8. The panel mounted rotary switch of claim 6, wherein the detent sub-assembly is  
prevented from rotational movement by an engagement with the bushing.
9. The panel mounted rotary switch of claim 8, wherein the engagement with the  
bushing comprises an extrusion on the detent sub-assembly that cooperates with a  
groove on the bushing.
10. The panel mounted rotary switch of claim 1, wherein the detent sub-assembly utilizes  
only one spring and at least one ball to contact rotor cams (cylindrical lobes) thereby  
setting a switch position.

11. The panel mounted rotary switch of claim 1 in electrical connection to a plurality of printed circuit boards.
12. A method of using a rotary switch, comprising:  
mounting the rotary switch to a panel such that a detent sub-assembly is in planar relation to the panel.
13. The method of claim 12, wherein the detent sub-assembly is housed in a bushing that extends from beneath the panel to above the panel.
14. A panel mounted rotary switch having a detent sub-assembly housed in a bushing.

AMENDED CLAIMS

[received by the International Bureau on 16th January 2004(16.01.04);  
claims 12 and 13 amended; remaining claims unchanged] 2 pages]

1. A panel mounted rotary switch, comprising:  
a bushing having an upper portion that extends through the panel to a user's side and a lower portion that remains beneath the panel and prevents the bushing from movement toward the user's side; and  
a detent sub-assembly housed in the upper portion of the bushing.
2. The panel mounted rotary switch of claim 1, having a shaft that couples a knob on the user's side with an electrical contact beneath the panel.
3. The panel mounted rotary switch of claim 2, wherein operation of the detent sub-assembly is independent of the knob.
4. The panel mounted rotary switch of claim 1, wherein the detent sub-assembly is positioned in planar relation to the panel.
5. The panel mounted rotary switch of claim 1, wherein the bushing is prevented from rotational movement by an engagement with the panel.
6. The panel mounted rotary switch of claim 5, wherein the lower portion of the bushing has a stop pin that fits within an aperture on the panel.
7. The panel mounted rotary switch of claim 5, wherein the upper portion of the bushing has a flat side that cooperates with a D shaped opening in the panel to prevent rotational movement.
8. The panel mounted rotary switch of claim 6, wherein the detent sub-assembly is prevented from rotational movement by an engagement with the bushing.
9. The panel mounted rotary switch of claim 8, wherein the engagement with the bushing comprises an extrusion on the detent sub-assembly that cooperates with a groove on the bushing.

10. The panel mounted rotary switch of claim 1, wherein the detent sub-assembly utilizes only one spring and at least one ball to contact rotor cams (cylindrical lobes) thereby setting a switch position.
11. The panel mounted rotary switch of claim 1 in electrical connection to a plurality of printed circuit boards.
12. A method of using a rotary switch, comprising:  
mounting the rotary switch to a panel such that a detent sub-assembly which is housed in a bushing is in planar relation to the panel.
13. The method of claim 12, wherein the bushing that extends from beneath the panel to above the panel.
14. A panel mounted rotary switch having a detent sub-assembly housed in a bushing.